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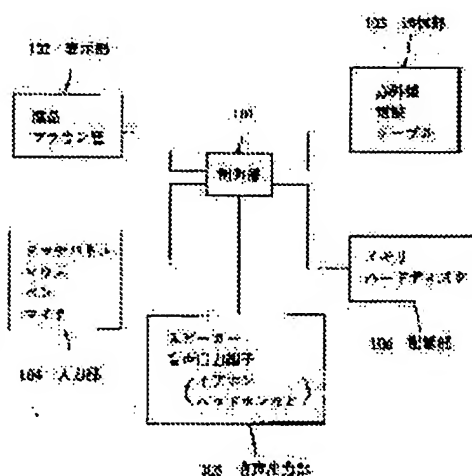
(54) REMOTE CONTROLLER, INFORMATION PORTABLE TERMINAL AND AUDIO  
VISUAL EQUIPMENT

(57)Abstract:

**PURPOSE:** To control an AV equipment totally by forming a system with the AV equipment and an intelligent AV remote commander inter-communicating an instruction and information.

**CONSTITUTION:** The system is provided with a display section 102 such as a liquid crystal display device and a cathode ray tube as an information provision means to the user and an audio output section 105 such as an audio output terminal and a built-in speaker or the like and also with an input section 104 receiving the control and the entry is conducted by using a touch panel, a mouse

and a pen or the like. Furthermore, in order to make 2-way communication without the AV equipment, a communication section 103 is provided. The communication section 103 adopts a radio system using an infrared ray or an FM wave or the like or a wired system connecting directly to an AV equipment by a cable. Furthermore, a storage section 106 for various information and for various setting is provided and a memory or a hard disk or the like is used. A control section 101 is provided to analyze and generate script and data and controlling each section.



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3. In the drawings, any words are not translated.

CLAIMS

[Claim(s)]

[Claim 1] a remote controller transmitting a command or information mutually using said means of communication between the singular number or two or more audio visual devices characterized by comprising the following which are alike and set and have the same means of communication as said remote controller.

A means of communication by radio or cables, such as infrared rays and an electric wave.

An input means of a device which detects existence, strength, coordinates, or continuous time of a depression with a pen, a finger, etc. as a displaying means of a liquid crystal, a cathode-ray tube, etc., a mouse, or a microphone, a memory measure which memorizes a variety of information, and a central processing unit.

[Claim 2] In claim 1 statement, between the singular number or two or more audio visual devices with the same means of communication as said remote controller, information, including a command for controlling said audio visual device, a picture, or a sound. Or a remote controller being based on language form based on specific grammar, and transmitting or receiving an operation situation of said audio visual device or said remote controller using said means of communication.

[Claim 3] Said command according to claim 2, information, or an operation situation transmitted or received in claim 2 statement using said means of communication. A remote controller having an inverter or conversion algorithms for changing language form based on said specific grammar into both directions or a uni directional in an inside or the exterior.

[Claim 4] In claim 1 statement, between the singular number or two or more audio visual devices with the same means of communication as said remote controller, A remote controller transmitting or receiving status which shows an operation situation of apparatus, or a command which operates apparatus using said means of communication.

[Claim 5] A remote controller using said means of communication, and transmitting or receiving picture information or speech information in claim 1 statement between the singular number or two or more audio visual devices with the same means of communication as said remote controller.

[Claim 6] In claim 5 statement, the singular number or two or more audio visual devices with the same means of communication as said remote controller according to claim 1, A remote controller, wherein it compresses picture information or speech information, it transmits to said remote controller and said remote controller decodes transmitted

said compressed picture information or speech information.

[Claim 7] A remote controller provided with a means to input speech information of a means or a microphone etc. which inputs picture information, such as a camera, in claim 1 statement.

[Claim 8] The singular number which has the same means of communication as said remote controller according to claim 1 in claim 7 statement, or two or more audio visual devices. Or a remote controller compressing or carrying out non-compression and transmitting picture information or speech information inputted into said remote controller according to claim 1 and same another remote controller by said means of communication.

[Claim 9] A remote controller memorizing compression, picture information by which non-compression was carried out, or speech information in claim 5, 6 or 7, or 8 statements to memory storage connected to the exterior of said memory measure or said remote controller according to claim 1.

[Claim 10] A remote controller reading said memorized compression, picture information by which non-compression was carried out, or speech information in claim 9 statement.

[Claim 11] A remote controller decoding said read picture information which was compressed or speech information in claim 10 statement.

[Claim 12] A remote controller characterized by displaying by said displaying means based on data transmitted in claim 1 statement from the singular number or two or more audio visual devices with the same means of communication as said remote controller.

[Claim 13] A remote controller having a voice output means of a loudspeaker, an audio output terminal, etc. in claim 1 statement.

[Claim 14] A remote controller processing in claim 1 statement to an input performed by a predetermined input means.

[Claim 15] A remote controller processing a command or information transmitted using said means of communication in claim 1 statement.

[Claim 16] A remote controller processing in claim 1 statement to a sound inputted using said input means.

[Claim 17] In claim 1 statement, when transmitting a command or a variety of information using said means of communication. A remote controller adding subject: equipment specification information on an audio visual device used as a transmission object or said remote controller, and same another remote controller to said command or a variety of information.

[Claim 18]A remote controller extracting subject equipment specification information that apparatus used as a transmission object was specified, in claim 1 statement from a command or a variety of information received using said means of communication.

[Claim 19]A remote controller determining whether process said command according to claim 18 or a variety of information received with said subject equipment specification information using said extracted subject equipment specification information in claim 18 statement.

[Claim 20]A remote controller characterized by transmitting said command or a variety of information when not processing said command according to claim 19 or a variety of information is determined using said subject equipment specification information in claim 19 statement.

[Claim 21]an information personal digital assistant transmitting a command or information mutually using said means of communication between the singular number or two or more audio visual devices characterized by comprising the following which are alike and set and have the same means of communication as said information personal digital assistant.

A means of communication by radio or cables, such as infrared rays and an electric wave.

An input means of a device which detects existence, strength, coordinates, or continuous time of a depression with a pen, a finger, etc. as a displaying means of a liquid crystal, a cathode-ray tube, etc., a mouse, or a microphone, a memory measure which memorizes a variety of information, and a central processing unit.

[Claim 22]In claim 21 statement, between the singular number or two or more audio visual devices with the same means of communication as said information personal digital assistant, Information, including a command for controlling said audio visual device, a picture, or a sound; Or an information personal digital assistant being based on language form based on specific grammar, and transmitting or receiving an operation situation of said audio visual device or said information personal digital assistant using said means of communication.

[Claim 23]Said command according to claim 22, information, or an operation situation transmitted or received in claim 22 statement using said means of communication, An information personal digital assistant having an inverter or conversion algorithms for changing language form based on said specific grammar into both directions or a uni directional in an inside or the exterior.

[Claim 24]In claim 21 statement, between the singular number or two or more audio

visual devices with the same means of communication as said information personal digital assistant, An information personal digital assistant transmitting or receiving status which shows an operation situation of apparatus, or a command which operates apparatus using said means of communication.

[Claim 25] An information personal digital assistant using said means of communication, and transmitting or receiving picture information or speech information in claim 21 statement between the singular number or two or more audio visual devices with the same means of communication as said information personal digital assistant.

[Claim 26] In claim 21 statement, the singular number or two or more audio visual devices with the same means of communication as said information personal digital assistant, An information personal digital assistant; wherein it compresses picture information or speech information, it transmits to said information personal digital assistant and said information personal digital assistant decodes transmitted said compressed picture information or speech information.

[Claim 27] An information personal digital assistant provided with a means to input speech information of a means or a microphone etc. which inputs picture information, such as a camera, in claim 21 statement.

[Claim 28] The singular number which has the same means of communication as said information personal digital assistant according to claim 1 in claim 27 statement, or two or more audio visual devices, Or an information personal digital assistant compressing or carrying out non compression and transmitting said picture information or speech information inputted into said information personal digital assistant according to claim 1 and same another information personal digital assistant by said means of communication.

[Claim 29] An information personal digital assistant memorizing [ in / for any of claims 25 thru/or 28 their being / a statement ] said compression, picture information by which non compression was carried out, or speech information to memory storage connected to the exterior of said memory measure or said information personal digital assistant according to claim 21.

[Claim 30] An information personal digital assistant reading said memorized, compression, picture information by which non compression was carried out, or speech information in claim 29 statement.

[Claim 31] An information personal digital assistant decoding said read picture information which was compressed or speech information in claim 30 statement.

[Claim 32] An information personal digital assistant characterized by displaying by said displaying means based on data transmitted in claim 21 statement from the singular

number or two or more audio visual devices with the same means of communication as said information personal digital assistant.

[Claim 33]An information personal digital assistant having a voice output means of a loudspeaker, an audio output terminal, etc. in claim 21 statement.

[Claim 34]An information personal digital assistant processing in claim 21 statement to an input performed by a predetermined input means.

[Claim 35]An information personal digital assistant processing a command or information transmitted using said means of communication in claim 21 statement.

[Claim 36]An information personal digital assistant processing in claim 21 statement to a sound inputted using said input means.

[Claim 37]In claim 21 statement, when transmitting a command or a variety of information using said means of communication, An information personal digital assistant adding subject equipment specification information on an audio visual device used as a transmission object, the remote controller according to claim 1 or said information personal digital assistant, and same another information personal digital assistant to said command or a variety of information.

[Claim 38]An information personal digital assistant extracting subject equipment specification information that apparatus used as a transmission object was specified, in claim 21 statement from a command or a variety of information received using said means of communication.

[Claim 39]An information personal digital assistant determining whether process said command according to claim 38 or a variety of information received with said subject equipment specification information using said extracted subject equipment specification information in claim 38 statement.

[Claim 40]An information personal digital assistant characterized by transmitting said command or a variety of information when not processing said command according to claim 39 or a variety of information is determined using said subject equipment specification information in claim 39 statement.

[Claim 41]In an audio visual device provided with a means of communication by radio or cables, such as infrared rays and an electric wave, Apparatus with the same means of communication as said audio visual device, such as an audio visual device, a remote controller, or an information personal digital assistant, and an audio visual device communicating bidirectionally using said means of communication.

[Claim 42]In an audio visual device provided with a means of communication by radio or cables, such as infrared rays and an electric wave, An audio visual device communicating with an audio visual device or an information personal digital assistant

with the same means of communication as said audio visual device to a uni directional using said means of communication.

[Claim 43] In claim 41 or 42 statements, were transmitted or received using said means of communication. A command for controlling said audio visual device by language form based on specific grammar. Or information including a picture or a sound. Or a remote controller with the same means of communication as said audio visual device or said audio visual device. Or an audio visual device having an inverter or conversion algorithms for processing an operation situation of an information personal digital assistant in an inside or the exterior.

[Claim 44] An audio visual device extracting an information part which specified said subject equipment in claim 41 or 42 statements from a transmitted command which specified subject equipment or a variety of information.

[Claim 45] An audio visual device determining whether process a transmitted command which specified said subject equipment, or a variety of information by referring to an information part which specified said subject equipment in claim 44 statement.

[Claim 46] By referring to an information part which specified said subject equipment in claim 45 statement. When not processing a transmitted command or a variety of information which specified said subject equipment according to claim 45 is determined. Have the same means of communication as said audio visual device according to claim 41 or 42. An audio visual device transmitting a command or a variety of information which specified said subject equipment as other audio visual devices, remote controllers, or information personal digital assistants.

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## DETAILED DESCRIPTION

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[Detailed Description of the Invention]

[0001]

[Industrial Application] This invention relates to a remote controller, an information personal digital assistant, and an audio visual device. It is related with a system (a remote controller, an information personal digital assistant, the system that combined the audio visual device suitably) for a user to manage an audio visual device comprehensively and simple at a home etc. especially.

[0002]

[Description of the Prior Art] There are various audio visual devices (AV equipment is called hereafter) including television or VTR in the present home. The latest AV



equipment has many which can be operated now with a remote controller (a remote control is called hereafter) even from the distant place, its number of remote controls increases inevitably with increase of the number of AV equipment, and it has the fault that operation becomes complicated. cover the function of two or more remote controls with one set that it should be solved -- a learned type remote control called \*\* has already appeared on the market in the commercial scene.

[0003] By building a wireless communication network between a computer, a factory process controller, and a handy terminal as an example of construction of the system using the infrared ray communication used with the usual remote control,

JP,2-257731,A is indicating a means by which information is exchanged and this system can be expanded to uses, such as communication, maintenance, and diagnosis.

[0004]

[Problem(s) to be Solved by the Invention] However, the above-mentioned learned type remote control must carry out setting out with an a priori complicated user in many cases, and one button takes charge of two or more functions according to target AV equipment, and user-friendliness is not necessarily good. That is, many things which a user has to memorize exist. When AV equipment increases in number dramatically, correspondence becomes impossible, and it has the fault that only a part can be operated among the operational functions of AV equipment.

[0005] In the art indicated by above-mentioned JP,2-257731,A, an infrared-ray-communication unit and a network device are required, and the situation where a network can be built using this system is restricted. That is, it is impossible to introduce this system at home only for viewing and listening of AV equipment as a matter of fact.

[0006] The place which this invention was made in view of the above-mentioned point, and is made into the purpose. By communicating in AV equipment and both directions, without introducing the special-purpose-machine machine of a large amount of investment or many. It is in providing the intelligent AV remote control which may raise a user's user-friendliness by leaps and bounds by performing batch management of the AV equipment in a home etc., and having the outstanding user interface.

[0007]

[Means for Solving the Problem] In order to attain the above-mentioned purpose, an intelligent AV remote control by this invention is provided with the following.

The communications department by infrared rays, radio including an electric wave, or a cable.

Input parts, such as a touch panel which detects depressions, such as a pen, a mouse,

and a finger.

Indicators, such as a liquid crystal and a cathode-ray tube.

A voice output part, a storage parts store which memorizes various setting out etc., and a control section for processing of various data or control.

[0008]

[Function] An intelligent AV remote control displays various information on an indicator to a user. On the other hand, when a user chooses a predetermined field by an input part, a user's intention is transmitted to this intelligent AV remote control. The communications department exchanges a variety of information in other AV equipment and both directions. A voice output part outputs a sound to a user. By providing the above each part in an intelligent AV remote control, it becomes possible to exchange the exterior, and various information and volition. And the portion which memorizes a variety of information is a storage parts store, and a control section manages all the portions described above.

[0009]

[Example] Hereafter, the example of this invention is described using a drawing.

Drawing 1 is a block diagram showing the composition of the intelligent AV remote control concerning one example of this invention.

[0010] As shown in drawing 1, there are the indicators 102, such as a liquid crystal and a cathode-ray tube, and the voice output parts 105, such as an audio output terminal for an earphone, headphone, a speaker, etc. and a built-in speaker, in the intelligent AV remote control of this example as users' information presenting means first. In order to receive users' operation, the input part 104 is formed, and a touch panel, a mouse, a pen, etc. are usually used, but the microphone for voice input and other input means can be established, and facilities can also be given to a person with an inconvenient input by a hand, etc.

[0011] In order to perform other AV equipment and two-way communication, there is the communications department 103. Either the radio system by electric waves, such as infrared rays and an FM wave, or the wired system which connects with AV equipment directly by a cable is OK as this.

[0012] There is the storage parts store 106 for carrying out memory of various information, including various setting out by a user, setting out of AV equipment, etc., etc., and a memory, a hard disk, etc. can be used. A storage parts store can also be provided in the exterior of an intelligent AV remote control.

[0013] The control section 101 performs control of above-mentioned each part and

analysis of a script or data, and generation. The procedure which controls each element used as the operation target of AV equipment is described, and a script is synonymous with a program here. The feature that communication becomes possible between the AV equipment handling the script of a different form and this intelligent AV remote control can be given by providing the interpreter which changes an interpretation and form of a script in built-in or the exterior at an intelligent AV remote control.

[0014] Since the function same naturally can be exhibited if it has the same composition as the above-mentioned intelligent AV remote control, the same role as the above-mentioned intelligent AV remote control can be imposed on the general-purpose apparatus generally called an information personal digital assistant. Here, with an information personal digital assistant, what can do things other than control of the AV equipment which has the same configuration as the intelligent AV remote control by this invention, and is explained here is pointed out. The advantage that AV equipment is controllable by the above-mentioned information personal digital assistant utilizable for various uses by this arises. At this time, such [ from the first ] a function may be given to said information personal digital assistant, and it is changeless to the above-mentioned function also in the form of adding a program, an interface, etc. for controlling AV equipment afterwards. Therefore, in no the following examples and drawings, even if an intelligent AV remote control is read with the above information personal digital assistants and it changes it, the contents change.

[0015] Drawing 2 is a figure showing one example of the appearance of the above-mentioned intelligent AV remote control. In this example, as shown in drawing 2, there is the liquid crystal display and touch panel 201, and it serves as the input part with a display portion, a finger, etc. In order to communicate with AV equipment, the infrared ray interface 202, the electric wave interface 203, and the cable connector 204 are formed, and communication by radio (an electric wave, infrared rays) and a cable is supported. Thus, the advantage that it can respond even if two or more means of communication which AV equipment performs exist simultaneously arises by establishing two or more communication interfaces. Of course, even if only one has a communication interface, there is no change in a function. And the earphone jack 205 for connecting an earphone, headphone, etc. and the loudspeaker 206 are formed as a voice output means.

[0016] Drawing 3 explains communication between the intelligent AV remote control 301 and AV equipment 302. The communication between the intelligent AV remote control 301 and AV equipment 302 is usually an exchange of a command, status or a

script, and data. That the intelligent AV remote control 301 and AV equipment 302 communicate, (A); When an intelligent AV remote control performs the check of existence of AV equipment or operation (303A); (B); when an intelligent AV remote control controls AV equipment (303B), it is a time (303C) of liking to give the information which has (C); AV equipment in an intelligent AV remote control, etc.

[0017]First, in the above (A), it is equivalent to 303A of drawing 3, but this is performed every fixed time, when operation of an intelligent AV remote control begins. The time of operation of an intelligent AV remote control beginning is a time of predetermined operation prescribed that operation is started being performed, when a user switches [ operation start ] on the intelligent AV remote control. The check of existence of AV equipment or operation performed every fixed time is for confirming whether AV equipment still exists in the communication range of an intelligent AV remote control, or what kind of operation if it exists, is performed. The intelligent AV remote control is [ this ] rich in portability.

While the user had had an intelligent AV remote control, when it moves, it is a means for coping with a possibility that the AV equipment it becomes impossible to communicate will come out.

However, this is caused by not every fixed time but a certain predetermined operation.

[0018]Next, said communication content of 303A is explained. First, an intelligent AV remote control scans the surroundings using a means of communication. Then, the response from AV equipment comes on the contrary. As for this, an intelligent AV remote control sends an AV equipment check command or a script. The procedure in which the AV equipment of a controlling side answers it and sends data may be sufficient, or the apparatus of a controlling side is sending data etc. always or intermittently, and the procedure of receiving it may be sufficient as an intelligent AV remote control. At this time, the data sent from the AV equipment of a controlling side is the data of a script and others which described the procedure which controls each element of the AV equipment which can carry out apparatus ID and control of the AV equipment. As an example of apparatus ID of AV equipment, the kind of AV equipment, a product name, a maker, a serial number, etc. are mentioned. When AV equipment is VTR, for example, a controllable element is each function, such as playback, rewinding, a rapid traverse, a halt, a stop, and recording, and the script corresponding to them is sent from AV equipment. The icon information for displaying the button of each function on the screen of an intelligent AV remote control may be then sent simultaneously. Furthermore, the data of an icon when displaying AV equipment on an intelligent AV remote control may be sent as one of the other data.

[0019]Next, the contents of 303B of drawing 3 in the above (B) are explained. When a user specifies operation of AV equipment on an intelligent AV remote control, or when it admits that an intelligent AV remote control is required, communication is performed between an intelligent AV remote control and AV equipment. At this time, ID of the AV equipment used as a controlled object, ID of the object used as a controlled object, an execution script, data to that object, etc. are sent to AV equipment from an intelligent AV remote control. Thereby, the user can operate AV equipment. On the other hand, corresponding to it, the status or script showing the present operation situation is sent to an intelligent AV remote control from AV equipment.

[0020]Display the picture of TV etc. on the screen of an intelligent AV remote control, or, When outputting a sound from speech output units, such as headphone connected with a loudspeaker or an audio output terminal with a built-in intelligent AV remote control, a picture and voice data -- non compression -- or -- compressing -- said operation situation status -- or it can also send to an intelligent AV remote control from AV equipment independently.

[0021]The contents of 303C of drawing 3 in the above (C) are explained to the last. When this has a certain abnormalities with AV equipment, status or that effect or script is sent to an intelligent AV remote control from AV equipment. When a user needs to get to know generating of the abnormality, when an intelligent AV remote control carries out a screen display of the abnormality according to said script, even if there is no user near the AV equipment which abnormalities generated, the abnormal occurrence can be known. When carrying out a screen display of the above-mentioned abnormalities, the user can acquire the feature that abnormalities are cancelable, by displaying the solution simultaneously, without wavering. The above-mentioned solution may be beforehand memorized by a certain method in the intelligent AV remote control, and when AV equipment tells abnormalities etc., it may be included in the script sent to an intelligent AV remote control. When an intelligent AV remote control copes with it unusually [the AV equipment], an intelligent AV remote control sends the script for management to object AV equipment. For example, when CD is put into a CD player and CD which a certain error generated and put in has not been recognized, a CD player makes the abnormal occurrence and its solution a script, and transmits to an intelligent AV remote control. The solution opens the tray of a CD player once, and closes again, and when CD is recognized again, the intelligent AV remote control which received the script transmits the script of the purport that the operation is performed to a CD player. And the intelligent AV remote control can

display on a screen the message of the purport that said abnormalities occurred at this time, and it can be urged that it waits to a user.

[0022] There are some methods in construction of the system of an intelligent AV remote control and the AV equipment which is controlling sides. There are that to which two-way communication is possible between AV equipment and between an intelligent AV remote control and AV equipment, and a thing which is not performed or it cannot perform communication between AV equipment in AV equipment first. Here, the AV equipment which cannot perform communication between AV equipment has referred to the thing in which operation with a remote control is possible with conventional AV equipment. Even if it is each AV equipment in which said two-way communication is possible, a system configuration which considers bidirectional communication as an intelligent AV remote control can also do only some AV equipment. It is very effective when all AV equipment and intelligent AV remote controls are not in the situation whose two-way communication is possible, then, \*\* -- the case where all AV equipment performs an intelligent AV remote control and two-way communication -- \*\* -- when some AV equipment communicates with an intelligent AV remote control, the case where the AV equipment and the system which cannot perform \*\* two-way communication are built will be shown below. It shall not be asked that the radio by infrared rays, an electric wave, etc. or a cable is the communication said here.

[0023] Drawing 4 is a system configuration example in the above-mentioned \*\*, and is the example which built the system with the AV equipment in which said two-way communication is possible, and the intelligent AV remote control. When all the AV equipment and intelligent AV remote controls are in the same room, it becomes a propagation path of such information.

[0024] The television 408 which contains satellite broadcasting, cable TV, etc. as AV equipment of a controlling side. The stereo 409 containing a CD player, a tuner, a cassette deck, the DAT deck, MD deck, the DCC deck, a record player, amplifier, etc., VTR407, the LD player 410, etc. are mentioned, and, naturally there may be other AV equipment 411. These various AV equipment may have more than one, respectively. In the example of this drawing 4, the stereo 409, TV408, VTR407, the LD player 410, and other AV equipment 411 are communicating with the intelligent AV remote control 401 separately, and each AV equipment has two-way communication possible for other AV equipment.

[0025] The mouse 402 and the pen 403 which are the external inputting means of the composition by the side of the intelligent AV remote control 401 are the same as the

mouse in the input part 104 of drawing 1, and a pen respectively.

It is provided when the input means of a touch panel etc. is not built in an intelligent AV remote control.

The headphone 404, the earphone 405, and the loudspeaker 406 which are voice outside output means are the same as that of the headphone in the voice output part 105 of drawing 1, an earphone, and a loudspeaker respectively.

It can connect, when the audio output terminal is provided in the intelligent AV remote control.

[0026] In order that the intelligent AV remote control 401 may communicate with each AV equipment, respectively in the case of a system configuration like this drawing 4, it has the feature that few time lags from transmission of information to the operation start of transmission destination AV equipment are. In this composition, it is also possible to transmit and receive a sound and a picture signal, and no troublesome wiring is needed but it is very furthermore easy to use between apparatus by communication between the AV equipment of this system instead of the cables for sending a conventional sound and picture signal for a user.

[0027] Drawing 5 is a system configuration example in the above mentioned \*\*, and in this system configuration example shown in the figure as well as drawing 4, the AV equipment which is a \*\*\*\*\* side may be various, and may have them, respectively.

[two or more] The mouse 502, the pen 503, the headphone 504, the earphone 505, and the loudspeaker 506 connected to the intelligent AV remote control 501 are the same as that of the above mentioned mouse of drawing 1, a pen, headphone, an earphone, and a loudspeaker. Here, all the AV equipment is performing the intelligent AV remote control 501 and two-way communication via the television 507, and shows the example for which AV equipment 511 of the stereo 508, the LD player 509, VTR510, and others is communicating with the television 507, respectively. Radio and a cable are not asked as [that the means of communication at this time is natural] above-mentioned.

[0028] Although the situation 507 which cannot carry out the direct communication of a certain AV equipment with the intelligent AV remote control 501 even if by considering it as a system configuration like this drawing 5, for example, television, is in the same room as the intelligent AV remote control 501. Even when saying that the stereo 508 is in another room, the intelligent AV remote control 501 has the effect that the stereo 508 is controllable, by passing the television 507. It is performed in the procedure in which a script etc. are first transmitted to the television 507 from the



stereo 508, and the television 507 which received it transmits the script of the above-mentioned stereo 508 to the intelligent AV remote control 501, and a reverse procedure is also possible for it.

[0029]The inside of the AV equipment which is a controlling side about the interpreter which interprets a script. For example, only the television 507 has and a command which is used with the remote control of the former [ between / the television 507 and other AV equipment ] in the script can be exchanged between the intelligent AV remote control 501 and the television 507. According to this method, no AV equipment needs to have an interpreter and it has the feature that simplification of the circuit of AV equipment can be attained. It is possible to transmit and receive a sound and a picture signal by communication of this system as well as drawing 4.

[0030]Drawing 6 is a system configuration example in the above mentioned \*\*, and is the example which built the system with the intelligent AV remote control 601 and the AV equipment which is not carried out or it cannot perform said two-way communication. Although the AV equipment which is a \*\*\*\*\* side may be various like drawing 4 and there may be more than one, respectively, in the example of this drawing 4. The stereo 607, TV608, VTR609, the LD player 610, and other AV equipment 611 are communicating with the intelligent AV remote control 601 separately. The mouse 602 and the pen 603 which are the external inputting means of the intelligent AV remote control 601, respectively -- the mouse of said drawing 1 carried out, and a pen -- the headphone 604, the earphone 605, and the loudspeaker 606 which are voice outside output means are the same as that of the headphone of said drawing 1 carried out, an earphone, and a loudspeaker respectively.

[0031]The advantage which constructs a system like this drawing 6 is being able to constitute a system also from AV equipment which cannot perform two-way communication between apparatus. When a remote control constitutes such a system from operational conventional AV equipment and the intelligent AV remote control 601. As the unified type remote control which controls AV equipment based on the data inputted beforehand, or a learned type remote control which can control apparatus now by memorizing operation of a certain remote control from the start later to AV equipment. This intelligent AV remote control 601 will operate. However, the different feature from such a conventional remote control is a point provided with an outstanding user interface like the after-mentioned. That is, although drawing 4 and drawing 5 showed the AV equipment which can perform two-way communication between apparatus, and the example which constitutes a system, also in this example, AV equipment is controllable by the completely same menu manipulation.



[0032]In the AV equipment with a communication function described above, although data etc. can be bidirectionally exchanged with an intelligent AV remote control, it is said that communication is impossible with other AV equipment — so to speak, it may be two-way communication possible AV equipment of a short form. When a system is constituted from this short form two-way communication possible AV equipment and an intelligent AV remote control, a system configuration completely becomes the same on drawing 5 and appearance. However, it becomes the form that the communication between AV equipment and an intelligent AV remote control covers all the contents shown in drawing 3, and only the exchange of the data between AV equipment, etc. cannot be performed.

[0033]In drawing 4 — drawing 6, the AV equipment whose two-way communication is possible, the AV equipment in which said short form two-way communication is possible, and the AV equipment which is not carried out or two-way communication is impossible can be mixed, and a system can be constituted for these as AV equipment of a controlling side. It can continue using in this system, without buying new conventional AV equipment, even when a user purchases by this the new AV equipment whose two-way communication is possible. At this time, that AV equipment may show what kind of communication is possible by the indicator of an intelligent AV remote control, and does not need to show it. When shown, the user can know that the range by which an intelligent AV remote control can control the AV equipment is restricted. When not shown, whether a user does not have the knowledge about two-way communication or does not know what kind of communication function the system comprises AV equipment with, until can treat an intelligent AV remote control to some extent.

[0034]In drawing 4 — drawing 6, the cable for spreading the conventional sound and an image may be connected between AV equipment or between AV equipment and an intelligent AV remote control. For the reasons of the burden to time, quality, and hardware, etc., when it is difficult for this to transmit and receive a sound and picture information by the communication function of this system, it is an effective means.

[0035]And by providing the interpreter which changes the form of a script in built-in or the exterior in drawing 4 — drawing 6 at each AV equipment. The feature that communication becomes possible between the AV equipment handling the script of a different form and between AV equipment and an intelligent AV remote control can be given. Build said interpreter in one certain AV equipment, or an interpreter is provided independently. When it is made to perform communication between AV equipment or between AV equipment and an intelligent AV remote control via the AV equipment or

interpreter, even if it does not provide an interpreter in other AV equipment or intelligent AV remote controls, communication becomes possible mutually.

[0036] Next, the example of a user interface of an intelligent AV remote control is shown. The feature of the user interface of this intelligent AV remote control, it is two or more methods being set as performing operation with AV equipment, it being intuitively intelligible by using a simile, giving facilities to a user by displaying various information simultaneously, and being able to change a screen display according to a user's request.

[0037] Drawing 7 is a figure showing one example of the initial screen of an intelligent AV remote control. The result to which, as for drawing 7, the intelligent AV remote control transmitted the AV equipment check command by the means of communication. It is a display example when there is a response, respectively from the television 701, the stereo 702, video (1) (videocassette recorder) 703, video (2) (video movie) 704, and the LD player 705. However, communication of each AV equipment illustrated here shall be possible for other AV equipment, an intelligent AV remote control, and both directions.

[0038] What has been sent as data is expressed to the intelligent AV remote control as this screen from each AV equipment except the icon of the time 706 and the help button 707. However, it may be made for an icon to assign the data which the intelligent AV remote control has from the first based on the kind of AV equipment. Although the AV equipment name under an icon assigned the equipment names which the intelligent AV remote control has memorized from the first based on the data sent from each AV equipment, the data of the product name etc. which have been sent from each AV equipment as they are may be sufficient as this. In this way, an intelligent AV remote control memorizes the various data about each AV equipment transmitted once to memory storage, such as a memory or a hard disk. It may be erased at the time of the operation finish of the intelligent AV remote control which could be lasting as for this memory and was caused by a certain predetermined operation.

[0039] The help button 707 is always displayed on the screen, when an operation method needs operation of intelligent AV remote controls other than operation of AV equipment, setting out, etc. and to be explained, it is used, but it mentions later for details. It may be made to always display the time 706 and a user is made to do setting out of whether to always display. By displaying the time 706, it becomes useful at the time of setting out of the timed recording of video, etc.

[0040] Drawing 8 blocks the above-mentioned example of an initial screen of drawing 7.

Although the intelligent AV remote control 801 is described until now, the pen 802 is formed for the loudspeaker 803 in the intelligent AV remote control 801 as a voice output means as an external inputting means here again, respectively. As AV equipment of a controlling side, the stereo 805, the LD player 806, VTR(1) (videocassette recorder) 807, and VTR(2) (video camera) 808 are in the state where communication is possible with the intelligent AV remote control 801 via the television 804. That is, it is the same as the state which showed in drawing 5.

[0041]Next, when the response from the AV equipment in which the intelligent AV remote control was able to check existence before it is lost, \*\* is just explained. Since an intelligent AV remote control uses it for the same purpose as the usual remote control, while the user had had it, it has very often moved. It may become impossible as a result, to communicate an intelligent AV remote control and AV equipment. For example, it is a case where an intelligent AV remote control and AV equipment were communicating on radio, and an electric wave, infrared rays, etc. which are the means of the radio stop arriving etc. Therefore, when every fixed time and predetermined operation are performed, it is checked how as for an intelligent AV remote control, each AV equipment is operating now again in AV equipment and the situation whose communication is possible.

[0042]When it describes above, the example of a block diagram when the response from the AV equipment which was able to check existence is lost before it is drawing 9. In the example shown in this drawing 9, in the aforementioned example of configuration shown in drawing 8, communication is impossible with the intelligent AV remote control 801 for the reason etc. which VTR(2) 808 described above, and which apparatus is in the situation whose communication is impossible like VTR(2) 908 of drawing 9. The other intelligent AV remote control 901, the pen 902, the loudspeaker 903, the television 904, the stereo 905, the LD player 906, and VTR(1) 907. It is in the intelligent AV remote control 801 of drawing 8, the pen 802, the loudspeaker 803, the television 804, the stereo 805, the LD player 806, and the state where it is the same as VTR(1) 807, and the same, respectively.

[0043]Drawing 10 shows how the above-mentioned state of drawing 9 is reflected in the display of an intelligent AV remote control screen. In the example of a screen display of this drawing 10, the response from the video (2) (video movie) 1004 [ same ] as VTR(2) 908 of drawing 9 is lost, and the user is visually told about the situation where communication is impossible for a certain reason by putting x seal on the icon of video (2). By giving such a function to an intelligent AV remote control, even if it pushes the button which tends to occur while using the conventional remote control,

imitation in case anything does not have a reaction of AV equipment etc. are cancelable. At this time, a user's embarrassment is also mitigable by displaying a solution on the screen of an intelligent AV remote control. The television 1001 of drawing 10, the stereo 1002, video (1) 1003, the LD player 1005, the time 1006, and the help button 1007. It is the same as the television 701 of drawing 7, the stereo 702, video (1) 703, the LD player 705, the time 706, and the help button 707 respectively.

[0044] Drawing 11 is an example of a screen display in the case of actually operating AV equipment on the screen of an intelligent AV remote control.

Here, one example of operation when playing video (1) was shown.

The icon of video (1) 703 of drawing 7 which is an initial screen first is selected with predetermined pointing devices, such as a pen, a mouse, and a finger. And in the state where it was chosen, it is put on the icon of the television 701 to display a reproduction screen on. Then, the icon of television will also be selected and it will be shown that a series of operations which the user performed now are effective.

[0045] The icon of video (1) lapping on television, as described above, and being further chosen by the icon of 1101 in drawing 11 (by a diagram, hatching is performed) is shown. As shown in drawing 11, a thing like the shadow 1103 of video (1) can be displayed on the portion as which the icon of video (1) was displayed from the first, and it can specify that video (1) was moved from the original position by that cause. Of course, it is not necessary to display the shadow 1103 of video (1). Operation of putting this videocassette recorder in television is a simile of displaying video on television.

Compared with the conventional remote control, it has very intuitively the advantage that it is intelligible.

The script which described operation by this operation by a user to the AV equipment which corresponds to video (1) from an intelligent AV remote control is sent. The stereo 1102 of drawing 11, video (2) 1104, the LD player 1105, the time 1106, and the help button 1107 are the same as the stereo 702 of drawing 7, video (2) 704, the LD player 705, the time 706, and the help button 707 respectively.

[0046] Drawing 12 is an example of a display screen of an intelligent AV remote control when not using a simile [as / as was explained by drawing 11]. Only in the case similarly selected with said predetermined pointing devices, such as a finger and a pen, the window 1208 for operation of video (1) 703 opens the icon of video (1) 703 of drawing 7 which is an initial screen. Each icon of the television 701 and the stereo 702 which were displayed in the initial screen at this time, video (1) 703, video (2) 704, and the LD player 705. It is redrawn in a position and a size which are not hidden in the

operation window 1208 of video (1). Becoming like the television 1202, the stereo 1203, video (1) 1201, video (2) 1204, and the LD player 1205, respectively, the icon 1201 of video (1) will be in the selected state, i.e., the state where hatching was performed in this figure; further.

[0047] In the operation window 1208 of video (1), The button 1216 for recording immediately the title 1209 of a window, the present tape counter 1210, the rewind button 1211, the reproduction button 1212, the fast forward button 1213, the pause button 1214, the earth switch 1215, and now, icons, such as the timed recording 1217, are displayed. Therefore, if the reproduction button 1212 is chosen with pointing devices, such as a pen and a finger, here, playback of video (1) will be started.

[0048] In the example of this drawing 12, since the object which displays a screen exists only in television, the reproduction screen of video (1) is automatically displayed on television, but when there are two or more televisions, the window for choosing the object which displays the reproduction screen of video (1) opens. By carrying out like this, operation of the conventional remote control or AV equipment can carry out on an intelligent AV remote control, a way can be copied in exactly the same way, and effect that a user is not bewildered by use of this intelligent AV remote control is achieved. In order that the window 1208 may express visually [ be / of which AV equipment / it / a window ], a thing like the marks 1218 which the window opened may be displayed. By carrying out like this, even if it does not read the title 1209 of a window, it becomes [ what window is open and ] possible to catch visually.

[0049] Drawing 13 is an example of a display screen of an intelligent AV remote control when playing the videocassette recorder which corresponds to video (1) using the procedure etc. which were shown in drawing 11 or drawing 12. In this figure, video (1) 1301, the television 1302, the stereo 1304, video (2) 1305, and the LD player 1306 are the same as that of video (1) 703 of drawing 7; the television 701, the stereo 702, video (2) 704, and the LD player 705 respectively. This example is in the state which the operation window 1310 of video (1) is opening so that video (1) can be operated immediately. The volume control window 1309 is also opened so that the volume of television can be adjusted similarly.

[0050] The user can know the operating state of the present video (1) easily by displaying, where [ 1314 ], a reproduction button is chosen, the character 1311 which expresses that it is under playback with the operation window 1310 of video (1), and Then, by displaying the tape counter 1312 of video (1), even if a user does not go near the videocassette recorder, he can know the residue of videotape. The user can make it the reference at the time of volume control by displaying the present volume on the

volume control window 1309 numerically with a regulation button.

[0051] On the other hand, although the state, i.e., hatching, where video (1) 1301 and the television 1302 were chosen is given in the icon of AV equipment, this shows that video (1) and the television are operating now. Although the loudspeaker 1303 is displayed beside television, this shows that the sound has come out from television now. By operating the icon 1303 of this loudspeaker, the sound of video (1) 1301 can be uttered from other AV equipment, or it can be made not to utter the sound of the television 1302. The selected window of the AV equipment which utters a sound may be displayed at the time of a video recovery start, and a user may be made to choose. When there is two or more apparatus which displays a picture, the icon which shows the window which chooses it, and image display may be provided like the icon 1303 of the above-mentioned loudspeaker.

[0052] The button 1318 for recording immediately in the window 1310 of the video 1 the rewind button 1313, the reproduction button 1314, the fast forward button 1315, the pause button 1316, the earth switch 1317, and now and the timer reservation button 1319. It is the same as that of the button 1216 for recording immediately the rewind button 1211 of drawing 12, the reproduction button 1212, the fast forward button 1213, the pause button 1214, the earth switch 1215, and now, respectively, and the timer reservation button 1217. The time 1307 and the help button 1308 are the same as the time 706 of drawing 7, and the help button 707 similarly.

[0053] Drawing 14 is one example of the display screen of an intelligent AV remote control in the case of performing timed recording setting out of video. In this drawing 14, video (1) 1401, the television 1402, the stereo 1403, video (2) 1404, and the LD player 1405 are the same as that of video (1) 703 of drawing 7, the television 701, the stereo 702, video (2) 704, and the LD player 705 respectively. In the example shown in drawing 14, the window 1409 for reserving video (1) is open, and this request-to-print-out-files window 1409 is opened when a user selects the request-to-print-out-files icon 1217 in the operation window 1208 of the video (1) of drawing 12. In order to show it on a screen, hatching is performed and displayed on the lower right 1408 of this request-to-print-out-files window 1409 in the state, i.e., this figure, where the above-mentioned request-to-print-out-files icon 1217 of drawing 12 was selected.

[0054] In the above-mentioned request-to-print-out-files window 1409, it roughly divides, there are two fields, and one is the field 1410 for the display of the situation reserved now, and the field 1411 for the request to print out files with new another. In the former field 1410, a date, video recording start time, recording finish time, and a

channel are describing. An indication for choosing a date, video recording start time, recording finish time, and a channel similarly is given to the latter field 1411. However, greatly different points from the conventional remote control are pointing devices used with this intelligent AV remote control, such as a pen, a mouse, and a finger, and are being able to write in a date to reserve directly, time, etc. on a screen. And character recognition of the written-in number is carried out. After erasing inputted drawing, it may be made to display input data in a printing type anew. Thereby, the user can confirm whether the input which he performed is effective. In order to input simply, the structure 1412 for changing date specification, day-of-the-week specification or the morning, an afternoon, etc. by one-touch can also be established. It does not set up by writing a character to a screen directly, and from the date already displayed in the form of the table etc., a day of the week, time, and a channel, even if it is the form of choosing the thing of hope, an effect does not change.

[0055] There are the button 1413 for cancellation and the button 1414 for an end in the request-to-print-out-files window 1409 of video (1) 1, and cancellation and an end of a request to print out files can be performed now simple. The time 1406 and the help button 1407 are the same as the time 706 of drawing 7, and the help button 707 respectively.

[0056] Drawing 15 is one example of the display screen of an intelligent AV remote control in the case of channel selection when viewing and listening to television. In drawing 7 which is an initial screen of an intelligent AV remote control, this drawing 15 is an example of a screen display when the icon 701 of television is selected with a predetermined pointing device. Therefore, hatching has been performed by the icon 1502 of television in the selected state, i.e., this figure. In this example shown in this drawing 15, the window 1309 for volume control of the television of drawing 13, the window 1508 which makes the same role, and the window 1509 for choosing the channel of television are open.

[0057] The thing with the same appearance as the conventional remote control is displayed on the window 1509 of channel selection.

Usage also only chooses the channel (for example, 1510) of hope with a predetermined pointing device, and is not less than the user-friendliness of the conventional remote control.

At this time, facilities can be given to a user by displaying the name of a television station into a channel button like 1510 apart from the number which shows a channel. What the intelligent AV remote control memorized a priori may be sufficient as the name of this television station, and what the user set up by predetermined operation



may be sufficient as it.

[0058] Although it is mentioned as one of the features of this intelligent AV remote control that a picture and voice data are receivable by communication from apparatus. That feature can be efficiently employed by choosing the field 1511 in the window 1509 of channel setting written "To project on this screen" with a predetermined pointing device in drawing 15. That is, if the described area 1511 is chosen, a picture and an audio signal are sent to an intelligent AV remote control from television, and it can view and listen to television on this intelligent AV remote control. The voice output part 105 of an intelligent AV remote control is then used for voice response at image display using the indicator 102 of the intelligent AV remote control of drawing 1.

[0059] Since it is possible for each AV equipment and an intelligent AV remote control to communicate mutually in this system configuration example, if it is a place in which either of AV equipment and communication are possible, also at a place without television, it is effective in becoming possible to view and listen to a TV program on this intelligent AV remote control. A picture and a sound are then transmitted to AV equipment by said means of communication from television in an order said from AV equipment to an intelligent AV remote control. The state of the picture transmitted in this way and voice data does not ask compression and non compression. When compressing, since it is compression, the software or hardware for decoding to an intelligent AV remote control is needed for AV equipment, but there is an advantage that there are few images between AV equipment and an intelligent AV remote control and transmission times of voice data, and they end. When incompressible, compared with the time of carrying out the above-mentioned compression, there is an advantage that the circuitry of AV equipment and an intelligent AV remote control becomes easy.

[0060] By providing the capture function of continuing displaying the screen until it memorizes TV footage with a user's directions and there are a user's directions as it is in an intelligent AV remote control. Also when the information which a user wants to acquire thoroughly comes out on television, facilities can be given to a user. The memory storage formed in the memory storage or the exterior established in the intelligent AV remote control can be used for memory of the TV footage at this time.

[0061] In drawing 15, video (1) 1501, the television 1502, the stereo 1503, video (2) 1504, the LD player 1505, the time 1506, and the help button 1507. It is the same as that of video (1) 703 of drawing 7, the television 701, the stereo 702, video (2) 704, the LD player 705, the time 706, and the help button 707 respectively.

[0062] Drawing 16 is an example in the case of viewing and listening to a TV program



on an intelligent AV remote control. Here, the intelligent AV remote control is sideways carried out so that it may be easy to display TV footage. On the screen of an intelligent AV remote control, TV footage 1604, the time 1603, the volume setting-out window 1601, the channel selection window 1602, the stop button 1605 of television reception, the help button 1606, etc. are displayed.

[0063]The volume setting-out window 1601 is the same as the volume setting-out window 1309 of drawing 13.

A channel to view and listen is freely changeable by choosing the button in the channel selection window 1602 with a predetermined pointing device.

At this time, the channel number of the television station currently displayed on [ other than the button into which a channel is changed ] a present intelligent AV remote control may be displayed, and facilities may be given to a user. And if the stop button 1605 is chosen in the state of drawing 16, the screen of an intelligent AV remote control will return to states, such as drawing 7 or drawing 15, again. It comes to be able to perform management of AV equipment, etc. simply by displaying arbitrary information, including the operation situation of other AV equipment, etc., besides these things. In drawing 16, the time 1603 and the help button 1606 are the same as the time 706 of drawing 7, and the help button 707 respectively.

[0064]Drawing 17 is an example of a screen display when a help button is chosen in the initial screen of the intelligent AV remote control of drawing 7, etc. At the lower right of the screen in this example, the help button 1707 is chosen now, namely, hatching has been performed on this screen. Since the help button 1707 was chosen, the window 1708 for setting out etc. is also opened. The field for explanation of the operation method of this intelligent AV remote control, setting out of a television channel and a television station, and other setting out is displayed on the setting-out window 1708.

If it chooses with a predetermined pointing device as stated until now, the window for these will open further.

An end button can also be displayed in this window 1708 for the end of this operation. When a user can operate it easily and provides the help button same for setting out of the television channel, etc., setting out of the time-consuming television channel [ the conventional system ] by carrying out like this. Since a manual can be directly referred to on a screen when a user does not understand the method of operation, it is possible very to be various functions compared with the conventional remote control, and to attain simplification.

[0065]In drawing 17, video (1) 1701, the television 1702, the stereo 1703, video (2)

1704, the LD player 1705, and the time 1706. The respectively same role as video (1) 703 of drawing 7, the television 701, the stereo 702, video (2) 704, the LD player 705, and the time 706 is made.

[0066]As mentioned above, this intelligent AV remote control has the feature that the data which carries out a screen display can be processed. Therefore, it can arrange on a screen freely, or a screen can also be rotated at any time like drawing 16, and facilities can be given to a user so that conveniently [ a user's use ].

[0067]When the power supply of an intelligent AV remote control is cut by predetermined operation, or when a user's predetermined operation is performed, an intelligent AV remote control may transmit a command, a script, etc. of powering off to each AV equipment. Since the power supply of all the AV equipment which communicates with it can be cut by turning off an intelligent AV remote control at once by that cause, the user can perform batch management of the power supply of all the AV equipment, without carrying out complicated operation.

[0068]Here, when two or more these intelligent AV remote controls exist, the case where the contents which each intelligent AV remote control transmitted to the same AV equipment, such as a command and the script, differ can be considered. In order to avoid it, a priority is attached to two or more intelligent AV remote controls by a user's operation etc., and when AV equipment receives the command etc. which cannot exist simultaneously, AV equipment can hear the intelligent high command of the priority. By doing so, it becomes possible to prevent that the activity of AV equipment changes quickly, and malfunction of AV equipment.

[0069]

[Effect of the Invention]By this invention, it has the same means of communication as this intelligent AV remote control or an information personal digital assistant as mentioned above. And a system consists of AV equipment which can exchange a command and information mutually in a script, i.e., the language form based on specific grammar, by this means of communication, and this intelligent AV remote control or an information personal digital assistant.

Therefore, it enables a user to control the above-mentioned AV equipment that it is simple and comprehensively.

By providing the interpreter which interprets the above-mentioned script and is generated in the exterior of an intelligent AV remote control or an information personal digital assistant. The effect that a command and information can be transmitted mutually is acquired also between the intelligent AV remote control or the information personal digital assistant, and AV equipment which differ in the form of

the script to treat.

[0070] By adding various processing to the command and information which the intelligent AV remote control or the information personal digital assistant acquired by said method, the user interface according to the case of being various can be built now, and it becomes possible to give facilities flexibly to a user.

[0071] In the composition of the intelligent AV remote control by this invention, or an information personal digital assistant. When a picture signal is transmitted to an intelligent AV remote control or an information personal digital assistant from AV equipment in compression or the state where non-compression was carried out other than said script, it is effective in the ability to see it on the screen of an intelligent AV remote control or an information personal digital assistant. At this time, the feature that a user can hear the sound in the compression transmitted with the described image signal or the state where non-compression was carried out can be acquired by providing a built-in loudspeaker and an audio output terminal in an intelligent AV remote control or an information personal digital assistant. By once memorizing the picture or audio signal in the state where it was compressed then sent to the memory storage connected to the intelligent AV remote control or the information personal digital assistant to built-in or the exterior. The effect that correspondence also of an intelligent AV remote control or an information personal digital assistant without the function decoded in real time becomes possible shows up.

[0072] The intelligent AV remote control or information personal digital assistant of this invention. Since the conventional AV equipment which can carry out remote control operation is also controllable as usual, when a user uses this intelligent AV remote control or an information personal digital assistant, he has the effect that it is not necessary to purchase AV equipment newly.

[0073] By memorizing a certain instantaneous picture and sound to the intelligent AV remote control or information personal digital assistant of this invention, and providing further again the function which continues reproducing it. Even when the necessity that a user wants to stop the information on television etc. suddenly runs, the demand can be filled quickly and easily.

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## DESCRIPTION OF DRAWINGS

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[Brief Description of the Drawings]

[Drawing 1] It is a block diagram showing the composition of the intelligent AV remote control concerning the example of this invention.

[Drawing 2] It is a perspective view showing one example of the appearance of the intelligent AV remote control by the example of this invention.

[Drawing 3] It is an explanatory view showing the example of the contents which communicate between the intelligent AV remote control and AV equipment by the example of this invention.

[Drawing 4] It is a system configuration by the intelligent AV remote control by an example and AV equipment of this invention, and is a system configuration figure in case AV equipment communicates with an intelligent AV remote control separately and each AV equipment communicates mutually.

[Drawing 5] By the system configuration by the intelligent AV remote control by an example and AV equipment of this invention, AV equipment communicates with television and television is a system configuration figure in the case (when AV equipment is communicating with the intelligent AV remote control via television) of communicating with an intelligent AV remote control.

[Drawing 6] It is a system configuration by the intelligent AV remote control by an example and AV equipment of this invention, and is a system configuration figure in case AV equipment communicates with an intelligent AV remote control separately and there is no communication between each AV equipment.

[Drawing 7] It is an explanatory view showing one example of the initial screen displayed on the intelligent AV remote control by the example of this invention.

[Drawing 8] It is a system configuration figure showing one example of a configuration in case the screen of drawing 7 is displayed.

[Drawing 9] It is a system configuration figure showing the state where it became impossible to communicate video (2) and an intelligent AV remote control in drawing 8.

[Drawing 10] It is an explanatory view showing one example of the display screen of the intelligent AV remote control at the time of the state which showed by drawing 9.

[Drawing 11] It is an explanatory view showing one example of the display screen of the intelligent AV remote control in the case of playing video (1) in drawing 7.

[Drawing 12] It is an explanatory view showing one example of everything but the display screen of the intelligent AV remote control in the case of playing video (1) in drawing 7.

[Drawing 13] It is an explanatory view showing one example of the display screen of the intelligent AV remote control at the time of playing video (1) in drawing 11 and drawing 12.

[Drawing 14] It is an explanatory view showing one example of the display screen of the intelligent AV remote control in the case of performing timer reservation of video

(1) in drawing 12.

[Drawing 15] It is an explanatory view showing one example of the display screen of the intelligent AV remote control in the case of choosing a television channel in drawing 7.

[Drawing 16] It is an explanatory view showing one example of the display screen of the intelligent AV remote control at the time of choosing a television channel to view and listen in drawing 15, and displaying the screen on an intelligent AV remote control further.

[Drawing 17] It is an explanatory view showing one example of the display screen of the intelligent AV remote control at the time of choosing a help button in drawing 7 etc.

[Description of Notations]

101 The control section of an intelligent AV remote control

102 The indicator of an intelligent AV remote control

103 The communications department of an intelligent AV remote control

104 The input part of an intelligent AV remote control

105 The voice output part of an intelligent AV remote control

106 The storage parts store of an intelligent AV remote control

201 The input and indicator of an intelligent AV remote control

202,203,204 Communication interface of an intelligent AV remote control

205,206 Voice output part of an intelligent AV remote control

303A, 303B, and 303C Communication content performed between an intelligent AV remote control and AV equipment

402, 403, 502, 503, and 602,603,802,902 Input means in the exterior of an intelligent AV remote control

404, 405, 406, 504, 505, 506, 604, and 605,606,803,903 Voice output means in the exterior of an intelligent AV remote control

701-705-1001-1005-1101-1105-1201-1205-1301-1306-1401-1405-1501-1505-17

01-1705 Icon of the AV equipment displayed on an intelligent AV remote control

1208-1310 and 1409 Video operation window

1309-1508 and 1601 Volume control window of television

1509-1602 Channel operation window of television

1708 The help window displayed when a help button is chosen

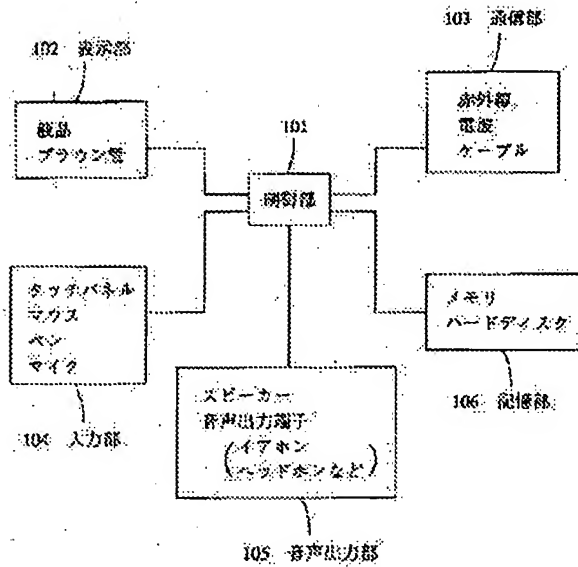
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## DRAWINGS

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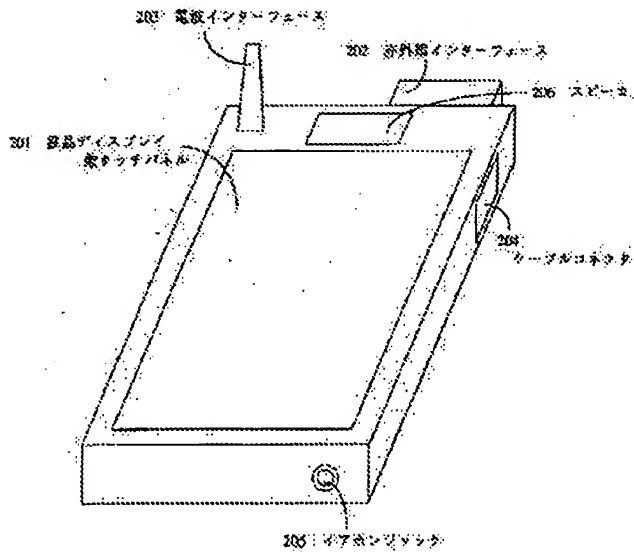
[Drawing 1]

インテリジェントAVリモコン装置構成例（図1）



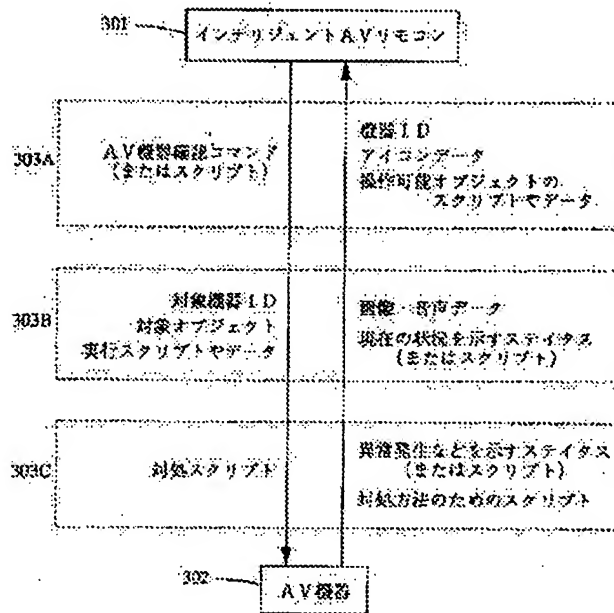
[Drawing 2]

インテリジェントAVリモコン装置外形例（図2）



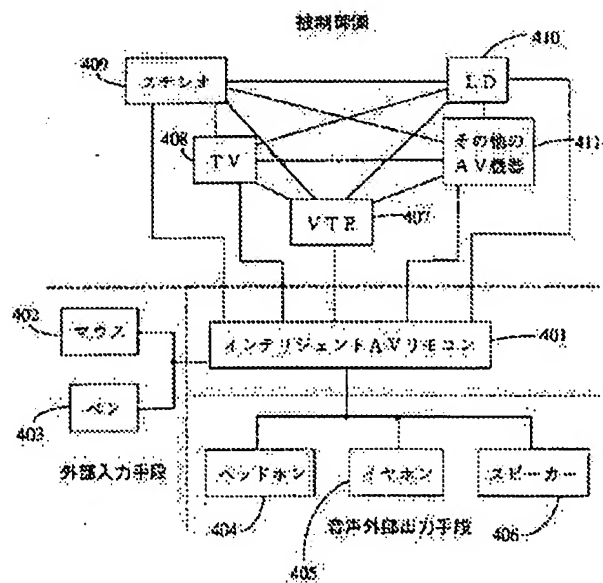
[Drawing 3]

インテリジェントAVリモコンとAV機器間の通信 (図3)



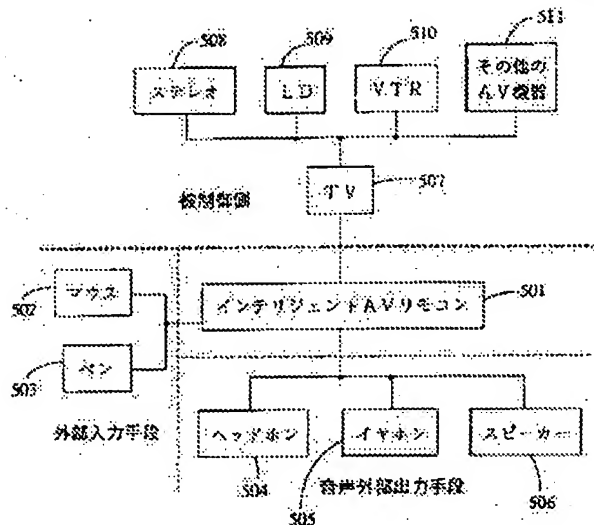
[Drawing 4]

システム構成例 (1)  
(AV機器が個々にインテリジェントAVリモコンと通信する場合)  
(図4)



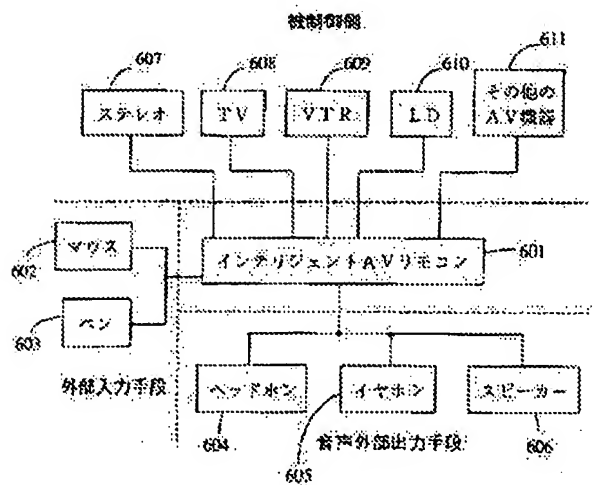
[Drawing 5]

システム構成例 (2)  
 (A/V機器がTVを介してインテリジェントA/Vリモコンと通信する例) (図5)



[Drawing 6]

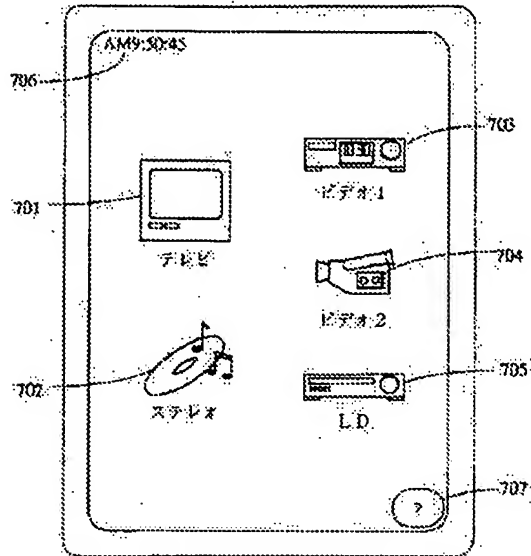
システム構成例 (3) (A/V機器が個々にインテリジェントA/Vリモコンと通信する例) (図5)



[Drawing 7]

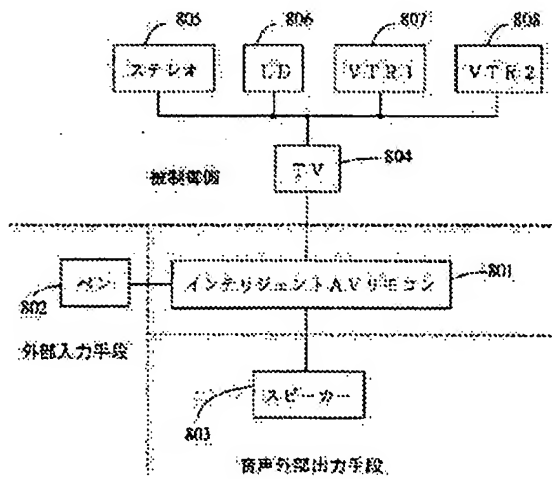


ユーザインターフェース例 (制御画面) (図7)



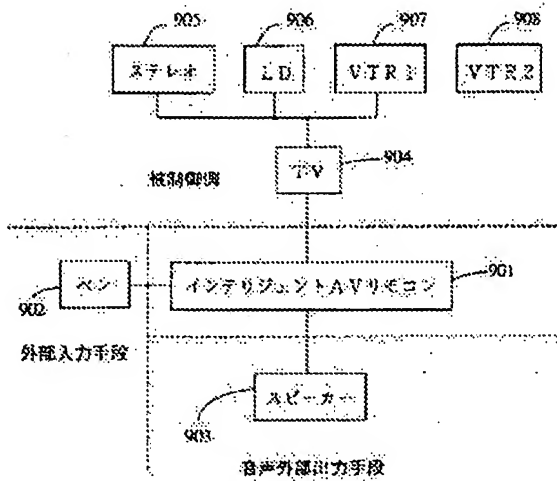
[Drawing 8]

接続構成例 (図8)



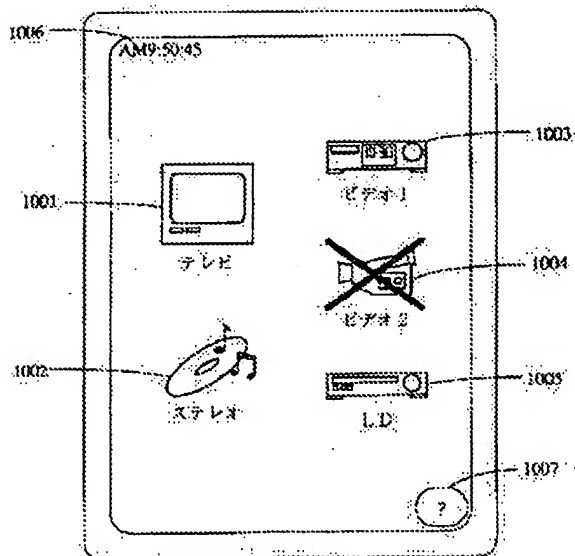
[Drawing 9]

途中で接続できなくなった場合の機器構成例 (図9)



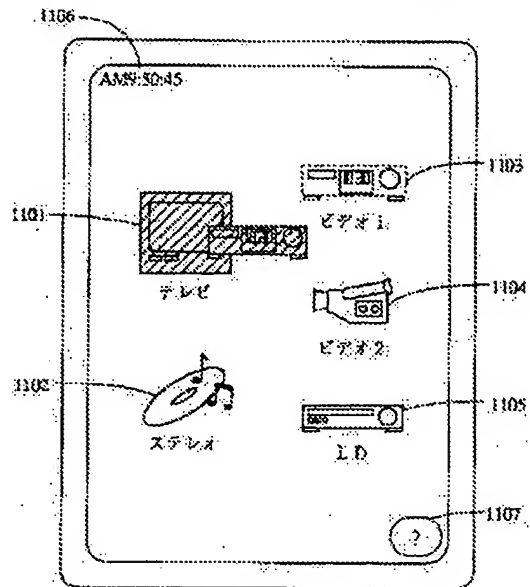
[Drawing 10]

ユーザインターフェース例 (途中で認識できなくなった場合の例)  
(図10)



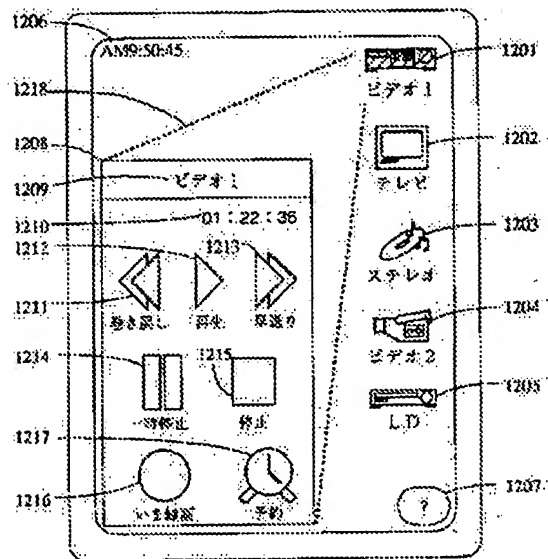
[Drawing 11]

ユーザインターフェース例 (ビデオ再生開始時の例)  
(図11)



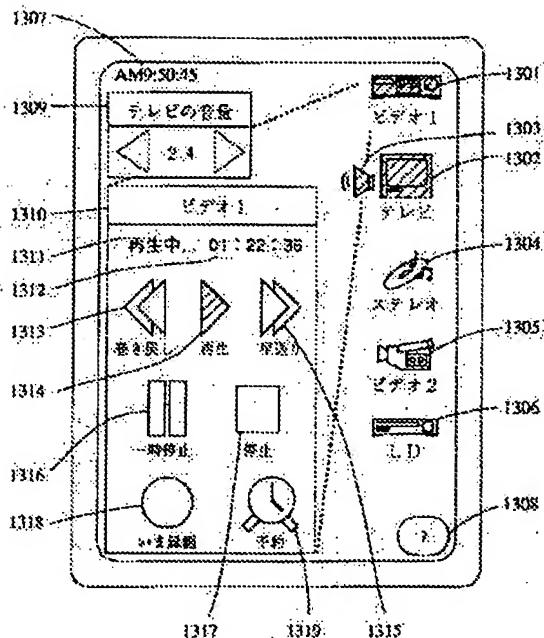
[Drawing 12]

ユーザインターフェース例 (ビデオ再生の制御)  
(図12)



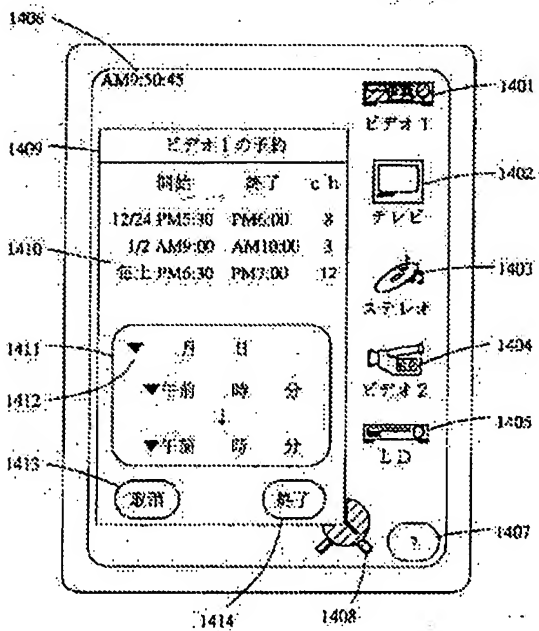
[Drawing 13]

ユーザインターフェイス例（ビデオ再生中の例）  
（図13）



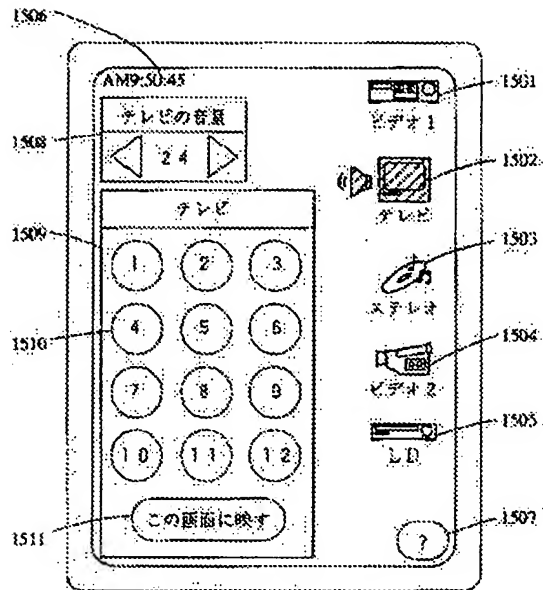
[Drawing 14]

ユーザインターフェイス例（ビデオ予約の例）  
（図14）



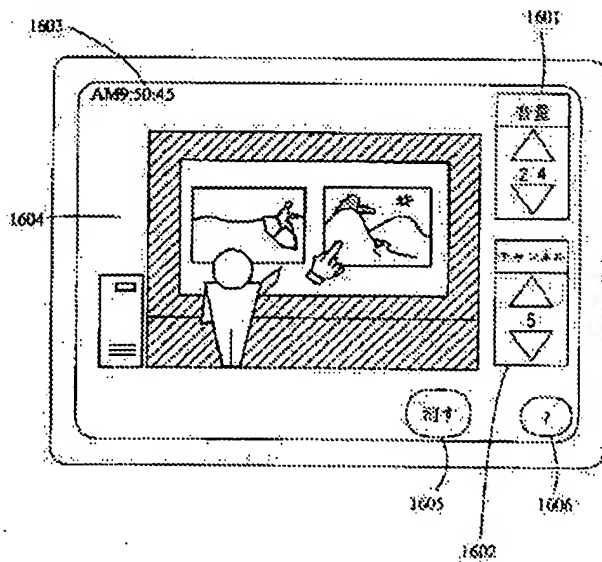
[Drawing 15]

ユーザインターフェース例 (テレビ画面の例)  
(図 1.5)



[Drawing 16]

ユーザインターフェース例 (テレビ画面を直接見る時の例)  
(図 1.6)



[Drawing 17]

ユーザインターフェース部 (ヘルプ・設定画面の例)  
(図17)

